CLAIMS

1. A method for reducing the number of RF channels used in a frequency hopping system having a standard hopping sequence that uses a predetermined number of RF channels, the frequency hopping system including a plurality of communication units amongst which there includes a master unit and one or more slave units, the method comprising the steps of:

(a) determining by one of the plurality of communication units if any of the RF channels in the standard hopping sequence are being interfered with; and

(b) sending a message by the unit performing step (a) to the one or more other communication unit(s) amongst the plurality which allows them to set up a reduced hopping sequence (RHS) that uses less RF channels than the standard hopping sequence.

2. A method as defined in claim 1, wherein the communication unit in step (a) determines if one or more RF channels are being interfered with by measuring the packet error rate (PER) for each of the RF channels in the standard hopping sequence.

3. A method as defined in claim 1, wherein the communication unit in step (a) determines if one or more RF channels are being interfered with by measuring the received signal strength indicator (RSSI) for each of the RF channels in the standard hopping sequence.

4. A method as defined in claim 1, wherein the communication unit in step (a) determines if one or more RF channels are being interfered with by measuring $E_b/(N_0 + I_0)$ for each of the RF channels in the standard hopping sequence.

5. A method as defined in claim 1, wherein the communication unit in step (a) determines if one or more RF channels are being interfered with by checking CRC information found in the header of any packets being transmitted in the RF channels.

6. A method as defined in claim 1, wherein in step (b), the message transmitted by the communication unit in step (a) to the one or more other communication units amongst the plurality informs them of which RF channels in the standard hopping sequence are to be removed when performing the reduced hopping sequence.

7. A method as defined in claim 6, wherein each of the RF channels which are removed from the reduced hopping sequence (RHS) are replaced with the previous RF channel to the removed RF channel found in the standard hopping sequence.

8. A method as defined in claim 1, further comprising the step of: communicating between the one or more slave units and the master unit after step (b) using the reduced hopping sequence (RHS).

9. A method as defined in claim 1, wherein the frequency hopping system comprises a Bluetooth system.

10. A method as defined in claim 1, wherein the master unit can communicate with one or more slave units using the reduced hopping sequence and with other slave units using the standard hopping sequence.

11. A method as defined in claim 1, wherein the RF channels found in the standard hopping sequence are grouped in a plurality of groups and the message sent by the communication unit in step (a) informs the other communication units from amongst the plurality which of groups to use in forming the reduced hopping sequence (RHS).

12. A method as defined in claim 1, wherein step (a) is performed by the master unit.

13. A method as defined in claim 1, wherein step (a) is performed by one or more of the slave units.

14. A method as defined in claim 1, wherein the message sent in step (b) also includes information on the bandwidth of the RF channels that comprise the RHS.

15. A method as defined in claim 1, wherein the communication unit making the determination in step (a) comprises a dual mode device that operates in two types of frequency hopping systems each having at least some of its RF channels overlapping with the other system, and the communication unit uses its information on the two types of systems to allocate the RF channels to each of the two systems in order to minimize interference amongst the two systems.

16. A Bluetooth system having a standard hopping sequence that includes a predetermined number of RF channels, the Bluetooth system comprising:

a master unit;

one or more slave units; and

wherein the master unit determines if any of the predetermined number of RF channels in the standard hopping sequence are being interfered with, and the master unit transmits a message to the one or more slave units informing them to set up a reduced hopping sequence (RHS) which includes less RF channels than the standard hopping sequence in order for the master unit and one or more slave units to communicate with each other.

17. A Bluetooth system as defined in claim 16, wherein the master unit includes a RF quality measurement circuit which can measure the quality of each of the RF channels in the standard hopping sequence.

18. A Bluetooth system as defined in claim 16, wherein any RF channels that are removed from the standard hopping sequence in order to create the RHS are replaced with the previous RF channel in the standard hopping sequence.

19. A Bluetooth system as defined in claim 16, wherein the master unit determines which of the RF channels to remove from the standard hopping sequence by taking a channel quality measurement selected from the group consisting of, packet error rate (PER), received signal strength indicator (RSSI), and $E_b/(N_o + I_o)$.

20. A Bluetooth system as defined in claim 16, wherein the master unit and one or more slave units have the RF channels which form the standard hopping sequence broken down into a plurality of RF channel groups which are stored in the units and wherein the message transmitted by the master unit informs the one or more slave units which from among the plurality of RF channel groups to use in forming the reduced hopping sequence (RHS).